C L A I M S

1. Tool for excavating an object, the tool comprising a jetting system having nozzle means arranged to receive a fluid and abrasive particles via an abrasive particle inlet, and arranged to impinge the object to be excavated with a jetted stream of the fluid mixed with the abrasive particles, the tool further comprising a recirculation system arranged to recirculate at least some of the abrasive particles from a return stream, downstream impingement of the jetted stream with the object to be excavated, back to the jetting system via the abrasive particle inlet, the abrasive particle inlet having an entrance window whereby filtering means are provided in a path fluidly connecting said return stream with the entrance window, for keeping the abrasive particle inlet free from objects of the same size or larger than the size of the entrance window, which filtering means is passable for the abrasive particles.

2. Tool according to claim 1, wherein the filtering means is provided with one or more filter openings shaped or arranged such that the filtering means is impassable for a particle having the same projected size and shape as the entrance window of the abrasive particle inlet and at the same time such that the one or more filter openings cannot be fully blocked by one such a particle.

3. Tool according to claim 2, wherein at least one filter opening is provided with a relatively large aspect ratio, which filter opening is in one direction sized smaller than the entrance window of the abrasive particle inlet and in another direction larger than said entrance window.

4. Tool according to any one of the claims 1 to 3, wherein the filtering means is provided with a plurality of filter openings, each filter opening being smaller than the entrance window of the abrasive particle inlet, at least in one direction lateral to the path, and consecutive filter openings being spaced apart over a distance larger than the size of the entrance window of the abrasive particle inlet opening.

5. Tool according to any one of the previous claims, wherein the recirculation system comprises a support surface to guide the abrasive particles towards the abrasive particle inlet, whereby the filtering means are provided in the form of a skirt creating a filter opening in the form of a slit between the skirt and support surface.

6. Tool according to claim 5, whereby the skirt is arranged to guide fluid from the return stream into said abrasive particle inlet in a path along the support surface.

7. Tool according to any one of the previous claims, wherein the recirculation system comprises a transport device for transporting the abrasive particles in a selected direction towards the abrasive particle inlet, the abrasive particles containing a magnetic material, and the transport device comprising:

- a support member having a support surface for supporting the abrasive particles, the support surface extending in the selected direction;
- a separator magnet arranged to generate a magnetic field for retaining the particles on the support surface whereby the magnetic field on the support surface is arranged to have a high-field band, a low-field band, and a magnetic field gradient in a gradient zone between said high- and low-field bands whereby the magnetic field

strength in the high-field band is higher than that in the low-field band;

- means for advancing the high- and low-field bands relative to the support surface in a direction having a component in the direction of the magnetic field gradient on the support surface, whereby the high-field band is followed by the low-field band.

8. The tool of claim 7, whereby along said high-field band at least a first magnetic pole and a second magnetic pole of opposite polarity are arranged such that a first magnetic path on the support surface from the first magnetic pole to the second magnetic pole is shorter than a second magnetic path on the support surface crossing the gradient zone from the first magnetic pole to any other nearest magnetic pole of opposite polarity.

9. The tool of claim 7 or 8, wherein the gradient zone is helically arranged around the separator.